

WHAT IS CLAIMED IS:

1 1. For use in a wireless network comprising a plurality of
2 base transceiver stations, each of said base transceiver stations
3 capable of establishing and maintaining communication links with a
4 plurality of a mobile stations by means of at least one overhead
5 channel and a plurality of data traffic channels, an apparatus for
6 allocating said plurality of data traffic channels comprising:

7 at least one of:

8 a failure detection circuit capable of detecting a
9 failure in said at least one overhead channel of a first
10 base transceiver station and generating a failure
11 notification; and

12 an access request detection circuit capable of
13 detecting an access request message received from an
14 accessing one of said plurality of mobile stations and
15 generating an access request notification; and

16 a channel allocator capable of receiving at least one of
17 said failure notification and said access request notification and,
18 in response thereto, terminating a first communication link between
19 said first base transceiver station and a first selected one of
20 said plurality of mobile stations, wherein said first selected
21 mobile station maintains at least a second communication link with

22 at least a second base transceiver station, and at least one of:
23 reconfiguring a first data traffic channel
24 associated with said terminated first communication link
25 as a replacement overhead channel replacing said failed
26 overhead channel; and
27 allocating said first data traffic channel
28 associated with said terminated first communication link
29 to establish a communication link with said accessing
30 mobile station.

1 2. The apparatus set forth in Claim 1 wherein said channel
2 allocator is capable of determining if one of said plurality of
3 data traffic channels associated with said first base transceiver
4 station is unused prior to terminating said first communication
5 link between said first base transceiver station and said first
6 selected mobile station.

1 3. The apparatus set forth in Claim 2 wherein said channel
2 allocator reconfigures an unused one of said plurality of data
3 traffic channels associated with said first base transceiver
4 station as said replacement overhead channel in lieu of terminating
5 said first communication link and reconfiguring said first data
6 traffic channel associated with said terminated first communication
7 link.

1 4. The apparatus set forth in Claim 2 wherein said channel
2 allocator allocates an unused one of said plurality of data traffic
3 channels associated with said first base transceiver station to
4 establish a communication link with said accessing mobile station
5 in lieu of terminating said first communication link and allocating
6 said first data traffic channel associated with said terminated
7 first communication link to establish a communication link with
8 said accessing mobile station.

1 5. The apparatus set forth in Claim 1 further comprising a
2 memory coupled to said channel allocator, wherein said memory is
3 capable of storing status data associated with said first
4 communication link.

1 6. The apparatus set forth in Claim 5 wherein said status
2 data comprises a received signal strength indicator associated with
3 said first communication link.

1 7. The apparatus set forth in Claim 5 wherein said status
2 data comprises handoff state data, wherein said handoff state data
3 indicates whether said first selected mobile station associated
4 with said first communication link maintains said at least a second
5 communication link with said at least a second base transceiver
6 station.

1 8. The apparatus set forth in Claim 7 wherein said handoff
2 state data indicates a total number of communication links said
3 first selected mobile station maintains with other ones of said
4 plurality of base transceiver stations.

1 9. A wireless network comprising:

2 a plurality of base transceiver stations, each of said
3 base transceiver stations capable of establishing and maintaining
4 communication links with a plurality of a mobile stations by means
5 of at least one overhead channel and a plurality of data traffic
6 channels; and

7 at least one apparatus for allocating said plurality of
8 data traffic channels comprising:

9 at least one of:

10 a failure detection circuit capable of
11 detecting a failure in said at least one overhead channel
12 of a first base transceiver station and generating a
13 failure notification; and

14 an access request detection circuit capable of
15 detecting an access request message received from an
16 accessing one of said plurality of mobile stations and
17 generating an access request notification; and

18 a channel allocator capable of receiving at least
19 one of said failure notification and said access request
20 notification and, in response thereto, terminating a
21 first communication link between said first base
22 transceiver station and a first selected one of said

23 plurality of mobile stations, wherein said first selected
24 mobile station maintains at least a second communication
25 link with at least a second base transceiver station, and
26 at least one of:

27 reconfiguring a first data traffic channel
28 associated with said terminated first communication link
29 as a replacement overhead channel replacing said failed
30 overhead channel; and

31 allocating said first data traffic channel
32 associated with said terminated first communication link
33 to establish a communication link with said accessing
34 mobile station.

1 10. The wireless network set forth in Claim 9 wherein said
2 channel allocator is capable of determining if one of said
3 plurality of data traffic channels associated with said first base
4 transceiver station is unused prior to terminating said first
5 communication link between said first base transceiver station and
6 said first selected mobile station.

1 11. The wireless network set forth in Claim 10 wherein said
2 channel allocator reconfigures an unused one of said plurality of
3 data traffic channels associated with said first base transceiver
4 station as said replacement overhead channel in lieu of terminating
5 said first communication link and reconfiguring said first data
6 traffic channel associated with said terminated first communication
7 link.

1 12. The apparatus set forth in Claim 10 wherein said channel
2 allocator allocates an unused one of said plurality of data traffic
3 channels associated with said first base transceiver station to
4 establish a communication link with said accessing mobile station
5 in lieu of terminating said first communication link and allocating
6 said first data traffic channel associated with said terminated
7 first communication link to establish a communication link with
8 said accessing mobile station.

1 13. The wireless network set forth in Claim 9 wherein said
2 apparatus further comprises a memory coupled to said overhead
3 channel controller, wherein said memory is capable of storing
4 status data associated with said first communication link.

1 14. The wireless network set forth in Claim 13 wherein said
2 status data comprises a received signal strength indicator
3 associated with said first communication link.

1 15. The wireless network set forth in Claim 9 wherein said
2 status data comprises handoff state data, wherein said handoff
3 state data indicates whether said first selected mobile station
4 associated with said first communication link maintains said at
5 least a second communication link with said at least a second base
6 transceiver station.

1 16. The wireless network set forth in Claim 15 wherein said
2 handoff state data indicates a total number of communication links
3 said first selected mobile station maintains with other ones of
4 said plurality of base transceiver stations.

1 17. For use in a wireless network comprising a plurality of
2 base transceiver stations, each of the base transceiver stations
3 capable of establishing and maintaining communication links with a
4 plurality of a mobile stations by means of at least one overhead
5 channel and a plurality of data traffic channels, a method for
6 allocating the plurality of data traffic channels comprising the
7 steps of:

8 at least one of:

9 detecting a failure in the at least one overhead
10 channel of a first base transceiver station;

11 detecting an access request message received from an
12 accessing one of said plurality of mobile stations; and
13 in response to at least one of the failure detection and
14 the access request message detection, terminating a first
15 communication link between the first base transceiver station and
16 a first selected one of the plurality of mobile stations, wherein
17 the first selected mobile station maintains at least a second
18 communication link with at least a second base transceiver station;
19 and

20 at least one of:

21 reconfiguring a first data traffic channel
22 associated with the terminated first communication link

23 as a replacement overhead channel replacing the failed
24 overhead channel; and

25 allocating the first data traffic channel associated
26 with the terminated first communication link to establish
27 a communication link with the accessing mobile station..

1 18. The method set forth in Claim 17 further comprising the
2 step of determining if one of the plurality of data traffic
3 channels associated with the first base transceiver station is
4 unused prior to terminating the first communication link between
5 the first base transceiver station and the first selected mobile
6 station.

1 19. The method set forth in Claim 18 further comprising the
2 step of reconfiguring an unused one of the plurality of data
3 traffic channels associated with the first base transceiver station
4 as the replacement overhead channel in lieu of terminating the
5 first communication link and reconfiguring the first data traffic
6 channel associated with the terminated first communication link.

1 20. The method set forth in Claim 16 further comprising the
2 step of allocating an unused one of the plurality of data traffic
3 channels associated with the first base transceiver station to
4 establish a communication link with the accessing mobile station in
5 lieu of terminating the first communication link and allocating the
6 first data traffic channel associated with the terminated first
7 communication link to establish a communication link with the
8 accessing mobile station.